

Largest intervention of its kind unravels the myths of exercise

June 24 2013



Credit: AI-generated image ([disclaimer](#))

An international team of scientists have embarked on an ambitious study, which is believed to be the biggest research of its kind. The objective is to discover if individualised lifestyle strategies can be developed to fight or prevent metabolic diseases such as obesity, diabetes and cardiovascular problems.

To do this, the METAPREDICT ('Developing Predictors of the Health Benefits of [Exercise](#) for Individuals') project plans to identify molecular biomarkers and study the response to exercise and training. This is supported by EU-funding of EUR 6 million and a multidisciplinary research group including medical staff, physiologists, and experts in genetics, genomics, informatics, and metabolism.

Principle coordinator of the project is Jamie Timmons, a professor of systems biology at Loughborough University. He says METAPREDICT has set out to study how 300 people in the United Kingdom, Sweden, Finland, Spain, Canada and the United States respond to a 10-week [supervised exercise](#)-training programme.

'The study group will train for 15 minutes for three days a week. We will then conduct a number of physiological tests such as monitoring their appetite, body fat, fitness levels and metabolism,' says Professor Timmons.

Like many clinical studies, finding volunteers is one of the main challenges for scientists, but for Professor Timmons, this was the easy part. He says: 'We have conducted 10 studies over recent years related to monitoring fitness levels and have received subsequent worldwide press coverage as a result.'

The consortium therefore has a high profile, which means volunteers approach the partners to be involved in on-going scientific studies. A major aspect of the current project will be High-Intensity Training (HIT), a programme developed during a previous study which took over eight years and involved hundreds of volunteers from the United Kingdom and Canada who cycled on an [exercise bike](#) for 20-30 seconds three times a week.

It was discovered that HIT used far more muscle tissue than classic

aerobic exercise. So the aim now is to decipher who it works best for, and how it impacts on body composition and other important health parameters. This study prompted Professor Timmons to call for the science of exercise (previously recommended at 30 minutes of brisk exercise five times a week), to be revised.

The current study may support this theory although the professor points out that people respond to physical activity differently. Nevertheless, the project will offer an insight into how the human body responds to exercise and training so that potential alternative solutions can be found.

The results will be evaluated later this year. The research team hope to develop a greater understanding of the biological networks which connect lifestyle and disease risk. It also aims to produce biotechnology outputs through its small and medium enterprise (SME) partners. As well as drive the development of personalised healthcare to improve the overall welfare of Europeans.

Provided by CORDIS

Citation: Largest intervention of its kind unravels the myths of exercise (2013, June 24) retrieved 25 April 2024 from

<https://medicalxpress.com/news/2013-06-largest-intervention-kind-unravels-myths.html>

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